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JISC infoNet

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Process Review

INFOKIT

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Introduction

All educational establishments from small specialist colleges to large multi-campus institutions carry out a complex range of processes in order to deliver learning and teaching. Most of us recognise that some of those processes could be improved but it is often difficult to know how to tackle the issues or indeed what to tackle first. Implementing new systems is often a driver for considering how we carry out business processes but you don't necessarily need technological change to do things in a better way.

Although we don't always talk about 'business' and 'customers' in the world of education we cannot escape the conclusion that we exist to serve the needs of a client group and foremost amongst those clients is the learner or student. Education differs from other types of 'business' in a number of significant ways. It operates within a controlled environment of external controls, shared governance, participative process and shared power. Also, although income generation forms an increasingly significant part of our activities, it is run on an essentially 'not for profit' basis. These factors limit the usefulness of many models developed in the commercial sector but this does not mean that we cannot learn anything from established good business practice in other large organisations. This infoKit takes a selective approach to the available models and identifies those that could be used to good effect within the education sector.

Many institutions are currently working on projects to integrate Virtual Learning Environments (VLEs) with their administrative systems to form a Managed Learning Environment (MLE). An MLE is effectively a set of business processes - there is no off-the-shelf IT system that can allow you to create an MLE - you need to develop your processes to fit your vision. At certain key points processes will 'hit' your IT systems. Look at optimising the 'non-system' as well as system components of the process (you may even be able to move non-system processes into the system environment). Often the non-system components are more flexibly changed. Considering processes across the piece in this way can dramatically affect the overall length and shape of the 'bigger picture' institutional process.

This infoKit could be aptly subtitled the Three Rs of Business Processes - the Rs being:

- Review
- Redesign
- Re-engineer

We offer a step-by-step guide to improving your business processes. You don't necessarily need to take all of the steps and, as we will go on to discuss, full-blown business re-engineering isn't appropriate for everyone (in fact there are probably very few examples of this actually happening in the education sector).

Business process review is a huge topic and there is a vast array of useful reference material. This infoKit will cover some key approaches and techniques and point to sources of further information. It won't tell you everything you could ever want to know about the subject but it will give you a very simple, fast-track method of evaluating your processes and finding better ways of doing things. Technophiles and those looking for the latest fad beware - it doesn't involve:

- Technology
- Complicated/expensive tools
- Lengthy training for staff
- External Consultants

If you're tired of being Restructured, Downsized, Benchmarked, Total Quality Managed, Performance Indicated or having your Scorecard Balanced try this common sense approach to business improvement.

This infoKit assumes that any business process review will be undertaken as a project and managed within a formal project management framework. The JISC infoNet approach to project management is based on the PRINCE2 methodology and is detailed in our **Project Management infoKit**. We have endeavoured to avoid any method-specific terminology in this infoKit and refer only to general project management practice.

Why look at our processes?

There are many reasons why you might want to do this but you need to be sure how the review fits in with your institutional **strategy**. It is also particularly important to understand how a business change project fits in with your institutional **culture and values**. Methods such as **PESTLE and SWOT analyses** are very useful in considering the context in which you are operating and the arising strengths, weaknesses, opportunities and threats.

A few suggested reasons for reviewing business processes are given below:

- **To give a better service to your clients and give competitive advantage**

  This may be two separate reasons or two sides to the same coin. The education sector puts a lot of emphasis on quality and added value but institutions also need to view themselves as businesses looking for a competitive edge. The two approaches aren't necessarily incompatible. The 'edge' you are looking for might be a better rating in your next inspection or quality review.

- **To ensure your processes fit the principles of how you do business**

  Any organisation that has been around for a number of years is likely to find it does things in ways that have grown incrementally over the years, often in response to a particular crisis or short-term demand, and rarely been challenged from the perspective of adding value. We hear a lot of rhetoric about moving forward and facing new challenges but this is unlikely to translate into real action whilst the institution is hampered by antiquated administrative procedures that have become inflexible, unresponsive to client demands and, very often, unnecessary.

- **As a necessary prerequisite to system implementation**

  This ought to go without saying but all too often institutions spend considerable amounts of money on new IT systems only to replicate their outmoded ways of doing things. They are effectively 'paving cow paths'. It is not always sensible to go for radical process change at the same time you are implementing a new system but if some form of basic process review isn't included in your project scope please think again.

- **As part of a Continuous Improvement Cycle**

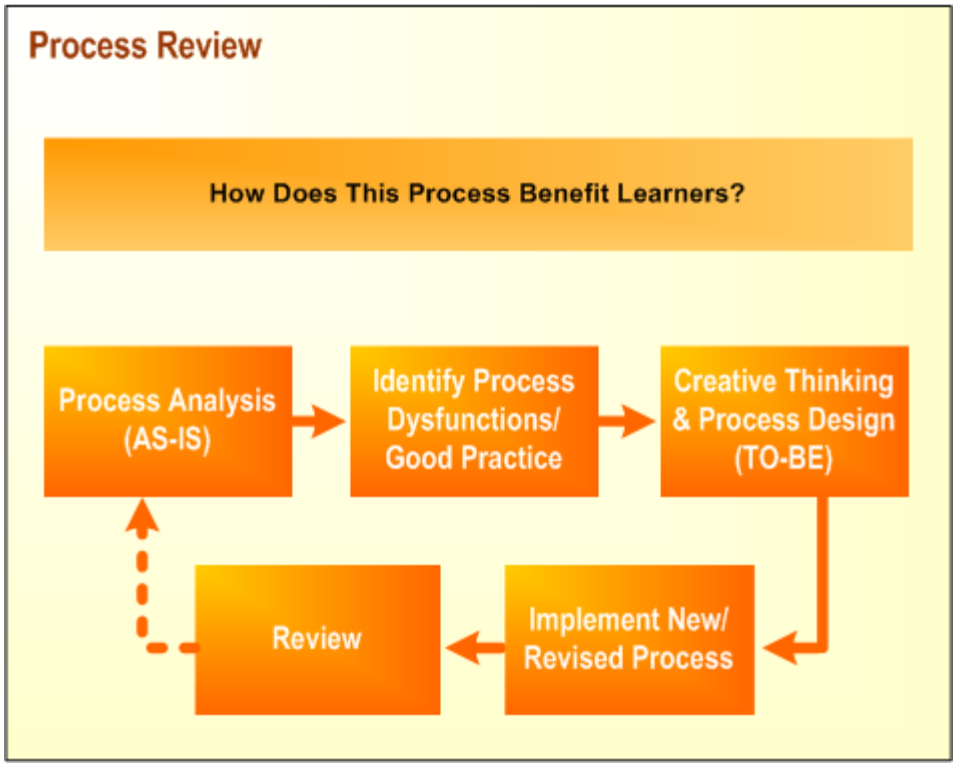
  With most process reviews, a certain amount of anxiety and fear is unavoidably introduced for the staff involved in the process under review. If it is suggested a process should be reviewed then by inference there is a suggestion that it may not be as efficient or effective as it might be. Just mentioning the possibility that a process might be reviewed will imply criticism to some.

  One way to avoid this is to foster a culture of continuous or regular reviews of organisational process. Once reviews are accepted as a routine process in their own right, reaction to an imminent review becomes 'Ah, it's time to review this one again' rather than 'Do they think I'm not pulling my weight?'

  We have already discussed above how processes can change incrementally over time. In the majority of cases the focus of the process shifts incrementally from clients to staff as process workers introduce small changes to make their tasks easier. Undertaking periodic reviews helps to keep the focus firmly on the needs and requirements of the client or learner.

The JISC infoNet Approach

Like other infoKits, we have devised a very simple model as a framework for the materials, in this case comprising five elements. The main body of this Kit runs through a number of analytical methodologies but we also focus on the impact, the barriers and the contributions that people can have when you come to manage a process review. This framework also highlights the idea of continuous process improvement previously mentioned by the inclusion of the dotted arrow feeding from the last element back to the first.



Putting learners at the heart of every process review by asking 'how does this process benefit learners?' gives you the best way of engaging staff in the organisation. The turmoil of day to day activity often clouds this focus.

Process Review was a bit of a buzzword a while ago and it got a bit of a bad press when concentration on methodologies forgot about the people at the heart of the processes. Many people still perceive the term process review in a negative light. Our workshops include a brief exercise where delegates are asked to list words relating to their perceptions of process review, the following were some of the most common statements:

- fear
- improvement
- evaluation
- challenging existing methods and approaches
- resistance to change
- responding to changing conditions/student expectations
- need for involvement
- need for top management support

We'll consider now some principles of process review, reinforcing the learner-centred approach, and look at the importance of stakeholders and building a team before we move onto look at some process analysis tools and techniques.

Principles of Process Review

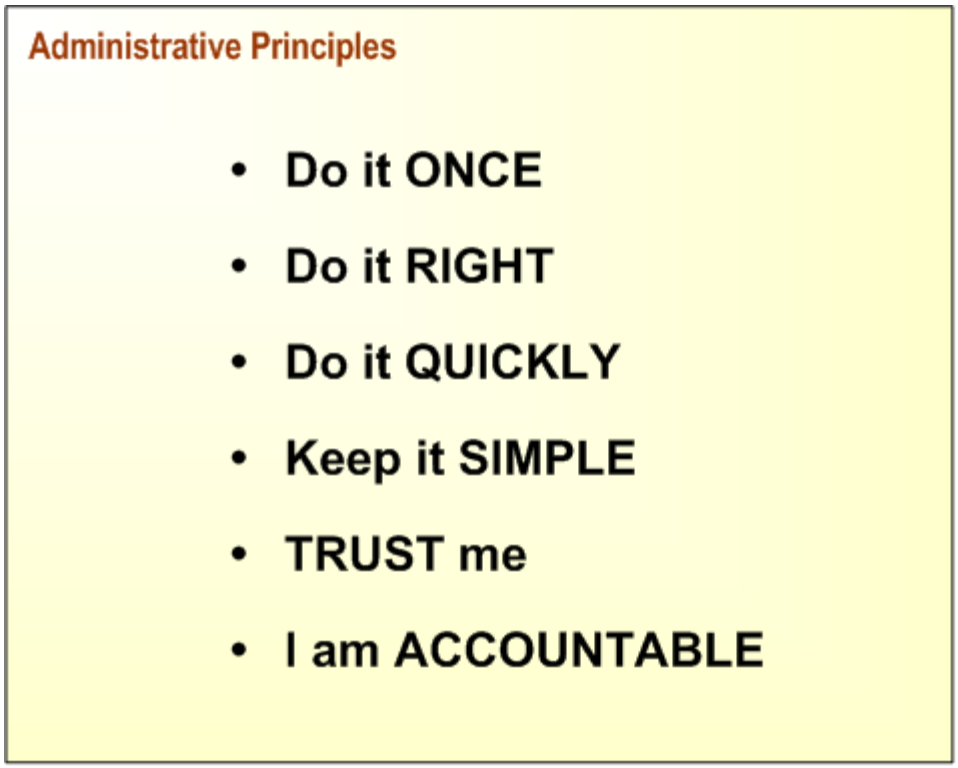
There are two key themes we suggest all institutions should keep in mind when thinking about their business processes:

- Customer/Client Focus
- Income Generation

Customer/Client Focus - A common theme amongst successful businesses in all areas of activity is that they have a strong client focus. This is a factor that is all too easily submerged when an institution is embroiled in the internal politics of running a project. Our view is that in our business the client is nearly always the learner. This Kit includes examples of a learner-centred approach to business processes that might surprise you. It is also worth remembering that learning and teaching is the core function of all of our institutions and that any consideration of the impact on the student as a client also means considering the impact on learning and teaching. Many types of change may impact on your pedagogic models e.g. moving into new markets such as distance or work-based learning. The design of your administrative processes also has an impact on pedagogy e.g. a lengthy enrolment period effectively reduces the teaching year and pushes you towards more independent learning. The introduction of on-line learning may have indirect impacts that, if not carefully managed, can affect your ability to deliver to your target audience e.g. printing costs passed on to student. To take the example further, you may offer open-access facilities to counter this but some students will not use the facilities unless there is some 'authority', in the form of security staff, present. Process design can be a minefield of issues such as this but, with a structured approach based on understanding and relating to client needs, they can be overcome.

Income Generation - This one may raise a few eyebrows but if you want to get the most out of this review forget about cost cutting and think instead about income generation. A narrow focus on bottom-line costs (aside from the notorious difficulties inherent in fully costing activities in the sector) will get in the way of you identifying opportunities. It emphasises a smokestack view of the organisation - you will cut the scope down to what (you believe) you can accurately cost and you will miss the chance to make potentially wide-ranging improvements. An example of such an approach could be the implementation of an HR system in a large institution. If you look at this purely from the perspective of costs in your Personnel Department it will cost money and may take increased staff time to input data. However if what you have actually done is to cut out a vast series of manual record systems across the organisation the potential savings are enormous (aside from the improvements in data quality and timeliness). Improving the experience your institution offers the student will undoubtedly lead to increased revenue. It will also lead to improved staff satisfaction: the other aspect to this approach is the critical need to get staff on your side when you are implementing change. People want to do a good job and to be associated with quality and value. If you want to get staff on board you need to emphasise that you are looking to improve quality and overall efficiency. Remember - turkeys won't vote for Christmas! The section on **costing** looks at this in more detail.

With this in mind you may want to think about the principles that underlie your business administration. We came up with six principles that we believe are appropriate to any process:



The principles are so straightforward and self-evident that few people could argue against them. You ought to be able to get both senior management and other staff signed up to the fact that this is how we should be working. Senior managers can see clearly that an organisation run along these lines will necessarily be as efficient and cost effective as possible. Staff can see that this is about doing a job well and adding value.

With this approach you can turn a potentially threatening review into a Win/Win situation for all of the major stakeholders.

Stakeholders

A major issue for an organisation of our type is who to involve in any project. This may be glossed over in many commercial approaches on the assumption that it is generally obvious who should be allocated a particular job. Things aren't quite the same in the education world which is why we focus here on involvement rather than simply setting up a team.

Most project methodologies will take you through identifying your key stakeholders, assessing their likely attitudes to the project and designing strategies to keep them on board. In education you ignore this at your peril. There are various approaches to involving stakeholders and you must think carefully about the best approach for your particular circumstances in order to get input from the right people at the right time.

Stakeholder Analysis

It is worth drawing up a list of stakeholders and their possible impact on and attitudes to the project.

The Project Management infoKit includes the JISC infoNet **Stakeholder analysis template**.

It is important that the analysis is shared with colleagues and preferably 'signed off' at project sponsor level to ensure that you do not get a 'rabbit-out-of-the-hat' stakeholder emerging unexpectedly in the middle of your project. This can derail a project.

In drawing up this sort of schedule it sometimes helps to assess the 'Potential impact on the Project' heading if you consider the type of involvement various stakeholders have on complex projects. If the project has been set in a

strategic context it will follow that most members of the organisation will be seen to some extent as stakeholders exercising some sort of influence or control as follows:

Strategic	Determining the strategy which this system underpins - may sponsor the project
Managerial	Executes managerial control over elements of the system being implemented
Operational	Is involved in operating the system or parts of it
Direct Influence	Is directly affected by outputs of the system but is not engaged in inputting to it
Indirect Influence	Is only indirectly affected by the system if at all

This is not an exhaustive list and you can create your own types to help you analyse your own organisation. However it is particularly important for you not to ignore the last two types of stakeholder. Although it could be argued that the last type is not a stakeholder at all, it is a particular characteristic of education organisations that particular interest groups have disproportionate negative power. You need to acknowledge this and devise a management strategy for it. Typically, this often involves large-scale communication exercises just to ensure that people remain 'onside'. This is another reason why systems implementation in an educational environment is often so complex.

What about directly involving people? There are two basic approaches to this which can be summed up as Representation v Delegation, both have advantages and drawbacks and some of these are suggested below.

Approach	Advantages	Disadvantages
Representation Attempting to take in the full range of views, interest groups and organisational units as part of the full decision making process. Characterised by democratic, committee-type decision-making.	• Covers full range of views • An obvious route to gain widespread acceptance of decisions(?)	• Involves people who may have limited knowledge of the subject area • Slows decision making • Can result in compromises which don't really represent 'best fit' in any particular area
Delegation Delegating responsibility to those identified as being best suited to the job	• Work carried out by those with appropriate skills and knowledge. Permits project to move forward more rapidly	• Acceptance relies on trust in those delegated - may be an alien approach in the education culture. Needs care to ensure that all relevant issues are properly understood and covered

As time is particularly constraining in the education world, with processes and policy moving on rapidly, the JISC infoNet suggested model is to follow a delegation route with a small team of committed subject experts empowered to undertake work on behalf of the wider community. The empowerment aspect is crucial, as is (under either approach) a robust communication strategy, devised in accordance with your stakeholder analysis as outlined above.

Influencing

This is a key skill that needs to be considered in the planning stages, when carrying out your stakeholder analysis, and will need to be engaged during your process review. JISC infoNet has produced some guidance on **influencing others**.

Building a Team

In any project you need to get the right team together in order to deliver a successful result. There is a vast body of literature on the **development of teams**. The phases of team development are commonly referred to as Forming, Storming, Norming and Performing (**The Tuckman Model**). If you need to bring together people from different backgrounds and experience in order to take important decisions for the organisation, you need to allow some time for them to develop as a group. In small projects, very basic training or a detailed briefing may be all that is required. In more major undertakings, time invested in developing your team will help ensure you make the right decisions.

It is important to get the right mix of people involved in a team. When changing processes or systems, you need a combination of the people who:

- know why we carry out the process
- know 'how we do it now' inside out
- can inject new ideas

If the process is related to the use of IT systems you also need people who fully understand the capabilities of the system as this can be important in helping to impose a sanity check on blue-sky thinking.

Your team members may be chosen for their specialist experience in a particular function but they will also bring to the team their own style of working and problem solving. A few examples of different approaches are given below. There are also a number of analytical frameworks which you can use to determine the mix of roles you have within a team, the **Belbin test** being one of the most well-known.

Left and Right Brain Thinkers

The two sides of the brain function differently in terms of how they process information. Left brain skills help people to function well in high tech environments, as they are adapted to analysing things and introducing logic to a problem or challenge. Right brain thinking is more holistic and intuitive. Left brain thinkers respond well to verbal messages and find it easy to describe and define things whereas right brain thinkers respond better to nonverbal imagery. Whilst left brain thinkers respond well to the meaning and context of words, right brain thinkers are more likely to respond to the actual phrasing and tone of sentences. In effect, skills develop within the left brain and values within the right.

Adaptors and Innovators

Professor Michael Kirton, in his Adaptation/Innovation theory, suggests that there is a spectrum of creative style - illustrating the different ways in which individuals approach bringing about change or problem-solving. Adaptors are at one end and Innovators are at the other. Adaptors prefer 'to make improvements in existing ways of doing things' and Innovators prefer 'to do things differently'.

Among many other characteristics, the Adaptor is likely to:

- Prefer improvement of existing structures over mould-breaking change
- Be methodical and prudent
- Put a high value on being efficient within a system
- Be interested in solving problems rather than looking for them

Whereas the Innovator, unsurprisingly given that they rest at the other side of the spectrum, is likely to:

- Prefer mould-breaking change over improvement of existing structures
- Be seen as undisciplined and reckless
- Put greater value on thinking up new skills than on implementing them
- Enjoy seeking out problems

Adaptors approach problem-solving from the inside, and Innovators from outside, in relation to the status quo.

Insiders and Outsiders

Insiders in this instance are those members of the team who come from within the environment or organisation the team is concentrating on. Outsiders are external to the organisation or at least that part of it. Insiders will understand the status quo thoroughly but can often be too close to the issue in hand to effect major change. Outsiders introduce an element of objectivity and are more ready to question assumptions.

Resourcing and Supporting the Team

A mix of left and right brain thinkers, adaptors and innovators and insiders and outsiders can give a healthy balance to a project team. The skill mix within the team is important but so is the fact that the team must feel empowered to deliver the project. They must be able to challenge the status quo and offer solutions that impact across the organisation. This means they must have the backing of a sponsor at senior management level who can resolve cross-departmental issues as they arise.

A further consideration that must be addressed is how the participants' time is allocated to the task in hand. There are generally three options:

Option	Advantages	Disadvantages
'Committed' Secondment i.e. resource devoted fully to project but with clear 'return path' following completion of project	• Fully committed to task for duration and has reassurance of returning to established post • Is seen by the stakeholder community as having an active interest from both perspectives	• May lose currency of knowledge if appropriate networks are not in place • Could still be summoned back to former post in crisis
'Shared' Secondment i.e. resource shared between project and established role	• Retains currency of knowledge from established post	• Likely to be drawn back to established post in 'crisis' periods as higher priority • Often ends up doing

		two 'full time' jobs
'Committed' post i.e. resource devoted fully to project	• Committed to task having severed ties with previous post	• May feel insecure as to eventual role at end of project • May be viewed by stakeholder community as remote from 'real' processes

This decision is dependent on the type and size of the institution and the project although a 'shared' secondment route is generally discouraged as the disadvantages listed above very often turn into reality.

In the context of planning and implementation projects, 'singular' commitment from individuals tends to reap better rewards (especially in the context of the time constraints previously mentioned), this is however often viewed as something of a luxury afforded to such projects.

If committed resource is available, then the question of secondment or committed post depends largely on the phase of work being undertaken and its duration. For example, in relation to system implementation projects it might be more suitable to employ full-time secondments to a selection phase but to opt for full-time committed posts in the implementation phase itself. Business process reviews tend usually to be carried out by seconded staff although if an institution is going in for a full-blown re-engineering project it is likely that committed posts will be required to see the changes through the implementation and embedding stages. Where a project is broken into different phases then ideally some continuity of staffing should link the phases. If not, then issues such as handover and bringing new staff up to speed need to be factored in to the time and resource estimates.

What is a Process?

A Process may be defined as:

- 'a particular course of action intended to achieve a result' or more specifically as
- a set of logically related tasks performed to achieve a defined business outcome. [From - Understanding senior management's behavior in promoting the strategic role of IT in process reengineering: use of the theory of reasoned action, Information & Management, In Press, Corrected Proof, Available online 8 March 2003, Ing-Long Wu - **doi:10.1016/S0378-7206(02)00115-5**]

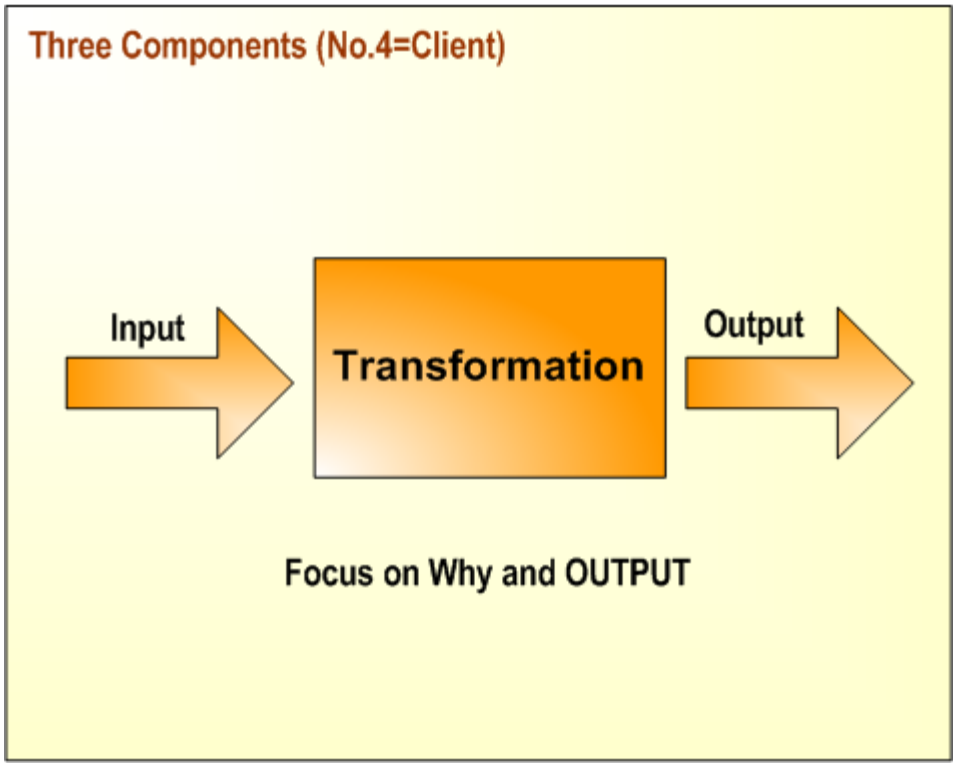
In both of these definitions the key thing is that what is important is the end result. A process exists to achieve a purpose. It is also useful to think of roles and responsibilities in this way. A person's job is not to carry out a process it is to achieve a result. Emphasising this can make it easier for people to think about how they might achieve that result in different ways.

Michael Hammer, often called the father of business process re-engineering, defined a process as:

- a related group of tasks that together create a result of value to a customer. [Moriarty T. & Thompson V. 1996. 'Business Analysis Techniques.' **www.inastrol.com/articles/9608.htm**]

This definition best fits the JISC infoNet client-centred approach.

Processes can be viewed in a variety of ways - one of the simplest is to see the components of each process as **input**, **transformation** and **output**.



Inputs may be information, materials or activities. The fourth, and most important, element of the process is the client. The purpose of the process and its end result is to meet the needs of a client. In education we can only really create effective and value-adding processes if we recognise that the client is usually the student. When reviewing our processes we need to think about WHY we are doing them and what output the client requires. In the case of education, the learner is the client because they are the recipient of a final product with the choice of where to seek it.

Keep the **strategic vision** and output in mind when thinking about your processes. There are many tools you can use to help in your review, and we will explore some of them in this infoKit, but before you get into the detail remember to focus your efforts on the WHY (the strategy) and the OUTPUT (the transformed input). It is easy to spend a lot of time analysing the detail and a lot of that time may well be wasted. Above all else keep thinking about WHY you are doing the process at all and the OUTPUT you need from it.

This clear focus will be necessary once you start to examine the realities of processes in your organisation. It will help you cut through the organisational smokestacks that currently exist to see the process overall.

Defining your Process

Considered in the broadest terms most organisations have very few core business processes. Try thinking about the core processes of your institution i.e. those that relate to your strategic objectives and are fundamental to the nature of the organisation and its relationship with clients. Most probably you will come up with no more than four or five. If you end up with more than nine you are not considering process at a strategic level. Michael Hammer maintains that no organisation has more than eight core processes.

Organisations that are intending to re-engineer will be focussing on those top-level processes. Most of the process review and redesign that is achievable in the education sector will be at a lower level but it is important before you start reviewing a process to ensure you correctly define what the process actually is and establish what the boundaries are.

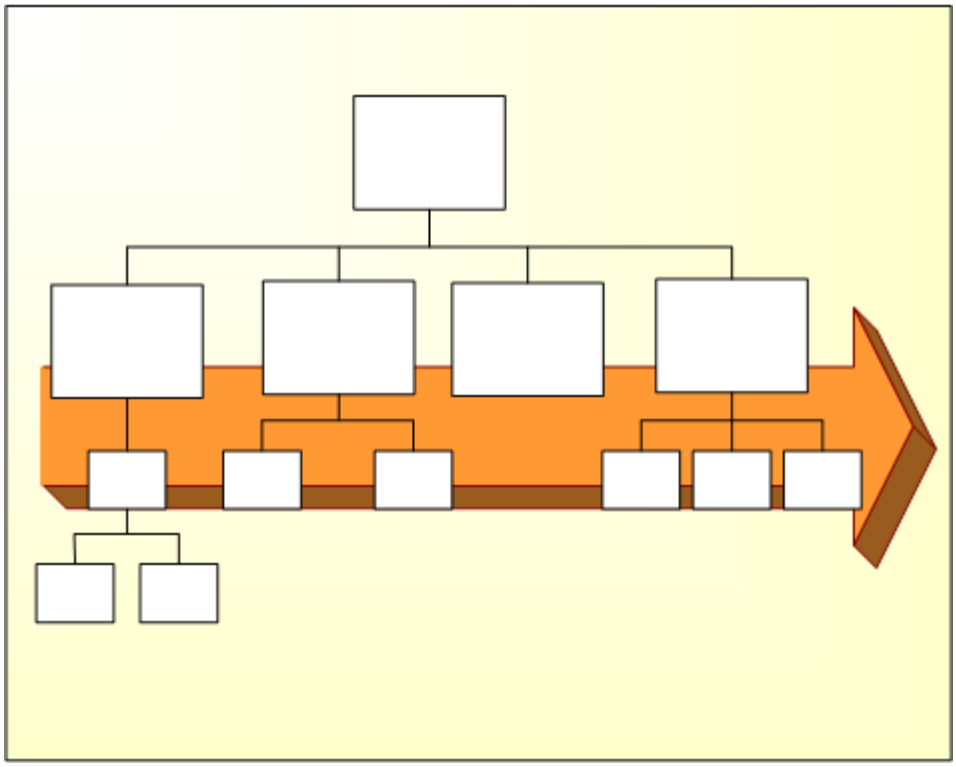
Take the example of the process of going on holiday. Some people may say it starts when you step on the plane and ends when you collect your suitcases from the airport carousel on the your return. Others might argue it starts with looking at maps and brochures and ends when you've unpacked and exchanged your foreign currency back to sterling. Neither view is right or wrong and each way of looking at it has its advantages and disadvantages.

Approach	Risk

Broad	Can lead to lack of focus and depth in analysis
Narrow	May miss opportunities for improvement by excluding a vital sub-process

Our recommendation is to start with a rapid end-to-end view of the process. The risk of missing opportunities by narrowing your thinking too soon tends to be the greater risk at the early stage.

It is also worth stressing the need to remember when you are defining a process that it's not about what a particular department does. You need to follow the process from start to finish right through the organisation and, especially in education, that frequently means crossing departmental boundaries. The diagram below illustrates how the business process cuts right across the organisation structure. Analysing a process is a very different approach to carrying out a functional review within a single department. The latter approach is typical of a 'smokestack' or 'silo' mentality. It is sadly the case that many colleges and universities still view themselves not as enterprise systems but as a series of discrete departments and functions.



Most importantly when defining a business process you need to determine the relationship of that process to the CLIENT. A theme you will find repeated throughout this infoKit is that the client is almost always the learner. If you think about a process from start to finish and you can't find the learner at either end of it then you need to return to the question of WHY you are doing this in the first place.

Let's look at an example of what we mean by this:

A large university introduced an Absence Management Policy for staff. This, on the face of it would seem to be purely about internal management and nothing to do with students. Indeed when asked what this policy was about and why it existed most respondents within the organisation thought it was about managing sickness absence and encouraging managers to deal with problem absences. Needless to say the policy (and associated process) was viewed in very negative terms by staff and managers alike. Using the JISC infoNet approach it was possible to turn this around and say the WHY of the policy was to have a fit and healthy workforce able to deliver services to students. This gives a very different perspective on the process and you can see how this affected the outcome of a business process review in a **case study**.

There are some examples where there is another type of client in a process e.g. a statutory body but for the present we will focus on internal processes which are usually the easiest processes to change.

Analysing the Process

Having defined the boundaries of the process you are about to analyse, it is time to take a sanity check and ensure that your project has a sponsor whose sphere of control covers all of the areas encompassed by the process. If your sponsor doesn't have sufficient political influence over all of the 'internal clients' involved you need to find another sponsor or narrow the scope of the project. The alternative is that your project team will spend a lot of time coming up with a proposal that is doomed to failure. Leadership is vital in ensuring that changes to business processes can actually be implemented.

Once you are clear that it is sensible for the project to proceed you can begin analysis. There are many process analysis models and tools available. This infoKit covers a few that are widely used and have been tried to good effect within the education sector. It is however worth remembering that all models are incomplete and represent a particular view or snapshot of a process. It may be that you need to apply a number of different models representing different perspectives and levels of abstraction before you develop an understanding of the issues that is helpful to you. Similarly, process analysis is an iterative activity. You will need to interview key participants in the process to build up a picture of activities and, having drawn up models, you will need to return to the stakeholders to verify that the models represent those activities accurately.

Process Decomposition

The process you have defined in broad terms now needs to be broken down to a level of detail that allows you to effectively understand and analyse the process. This activity is often termed 'process decomposition'. The process is likely to break down into:

- Major process
- Sub-processes
- Activities

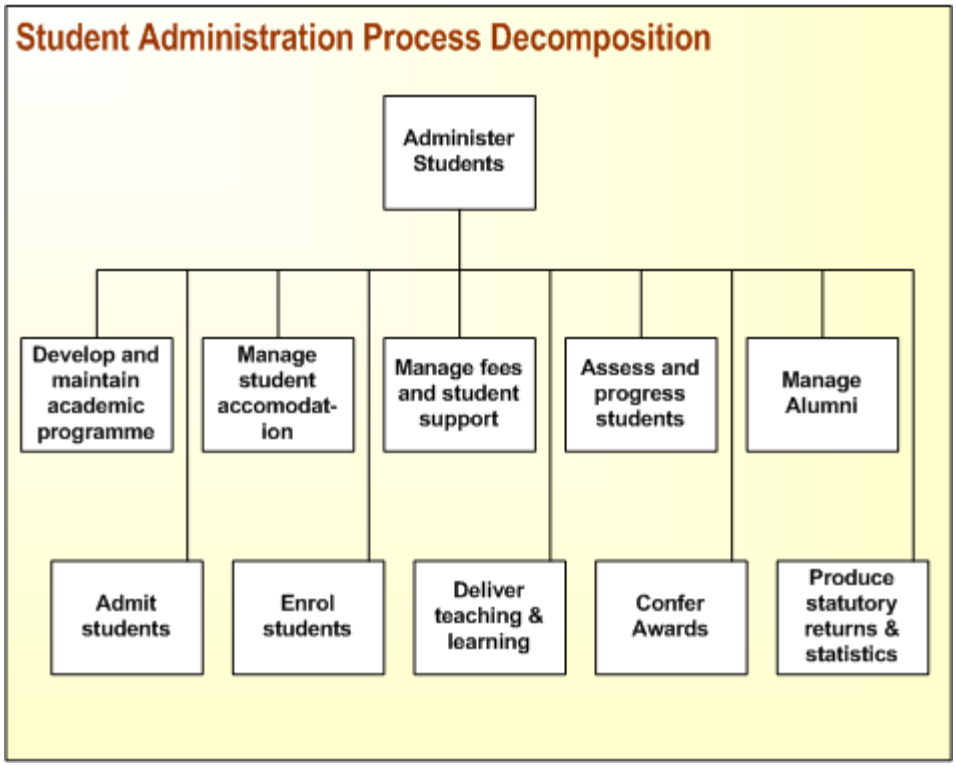
When describing a process or sub process it is helpful to use the format:

verb + noun

e.g. Enrol Student

You will need to be clear about what you mean about each of the terms you use. It will be helpful to document your definition and confirm this with the stakeholders e.g. what do you mean by student? If there is a lack of clarity about the definition this may indicate the need to break the process down further. For example the process of enrolling a part time student or distance learner may be very different to the process for enrolling a full time student.

The diagram below shows an example of a process decomposition developed by an institution undertaking replacement of its student administration system. The team decided that the broad process under review was Administering Students and that it broke down into 10 major sub-processes. Each of these then broke down into a number of sub-processes with associated activities.



Current State/As Is

Once you have defined your business process, the first stage in reviewing it is to record the process in its current state. This is sometimes known as 'As is' analysis. This is a stage that can potentially be very time consuming when you are considering a complex process with a number of sub-processes. There is no hard and fast rule about how much detail you should go into at this stage. This depends very much on the nature of the process and the degree of control you have over it.

Sometimes a very rough analysis can reveal a fundamentally flawed process where the best approach is to start again from first principles. In a case like this it may not be worth devoting a lot of time to detailed recording of how you do things now. A note of caution however - if you decide on a 'quick and dirty' approach to this stage you must be very confident that you understand your **information and data** needs. For example, suppose you decide that the process of Admitting Students is actually 10 sub-processes, depending on the type of student, and having recorded five of these sub-processes you realise you want to start the process design from scratch. This may be a perfectly valid approach so long as you are fully aware of the information and data needs of the other five sub-processes. Student admissions is an example where process design may be constrained by statutory obligations, the need to link to other systems, such as external clearing houses, and the timing of data availability.

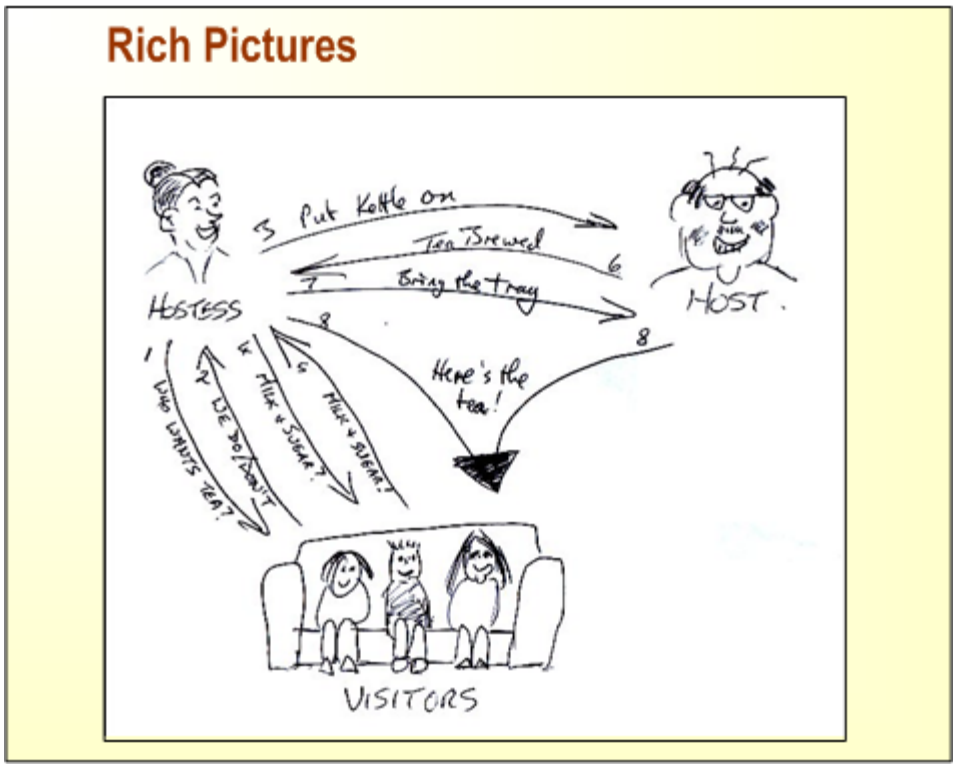
The rule of thumb is to understand your data inside out but don't get so detailed about the mapping that you are bogged down and suffering 'Paralysis by Analysis'. Going back to the composition of your project team you will often find that insiders tend to record a lot of detail whereas outsiders abstract to a higher level so the right mix of people can help you find the optimum approach. This Kit includes a **template** for initial data collection about a process.

Rich Pictures

A useful way to start a high level analysis is to identify players in the process. A quick and simple method is to use Rich Pictures - example below shows the players and the key interactions between them for the following simple tea-making scenario:

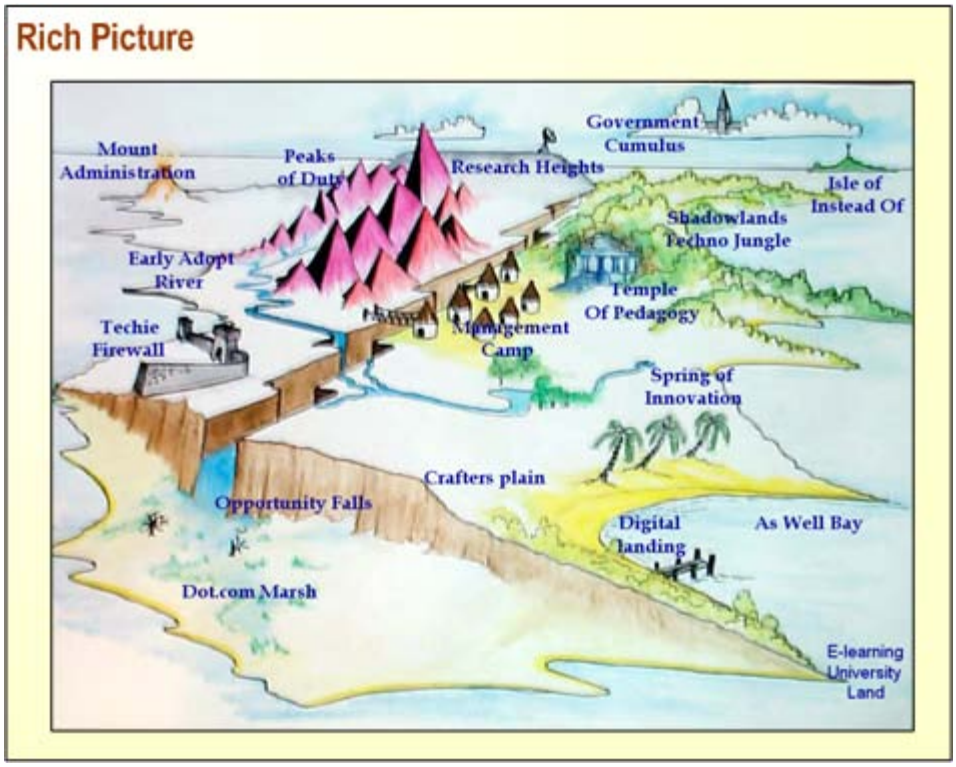
1. Hostess asks who would like a cup of tea
2. Visitors signify whether they want a cup

3. Host is sent to put kettle on
4. Hostess gathers information on preferences for sugar and milk
5. Hostess gets sugar and milk ready
6. Host brews and pours tea
7. Hostess puts mugs on tray
8. Host carries tray back to visitors and hands out mugs



Rich Pictures can help to identify open loops or redundant checking at an early stage, major issues will show up relatively easily. You should be wary - as with all the tools outlined here - of 'paralysis by analysis', don't get too bogged down in the detail when using this high-level method. It can be a useful tool to compare the differences before and after process review.

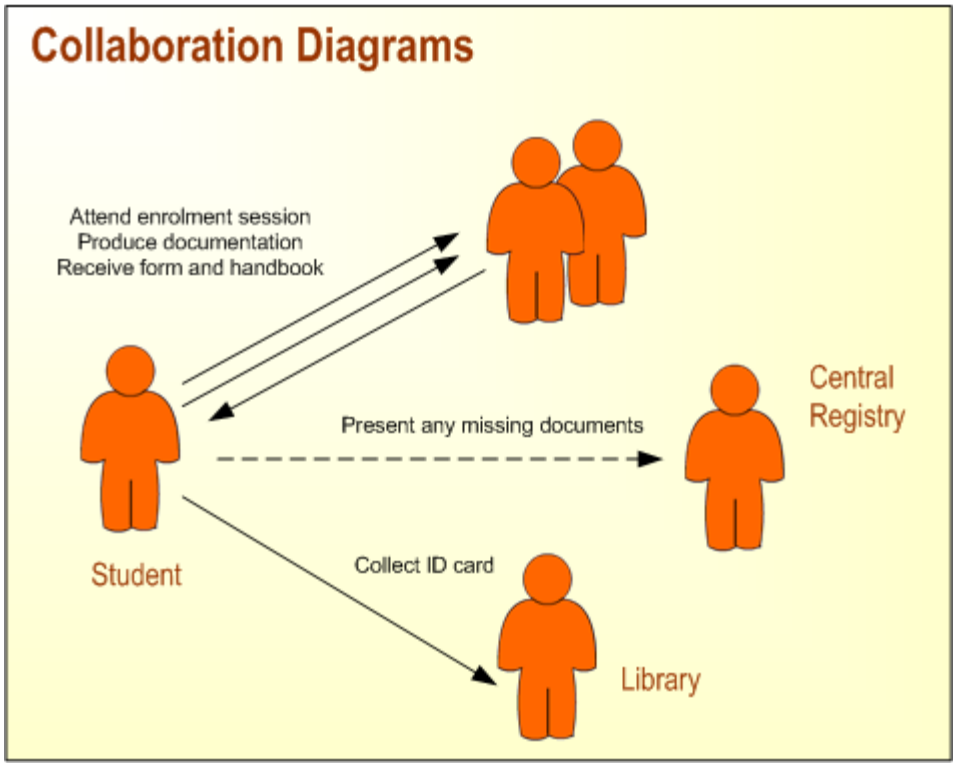
A variant on the theme of Rich Pictures is this map produced by Professor Gilly Salmon to help understand the perspectives of different stakeholders involved in implementing an institutional e-learning strategy.



The map does not claim to be complete and is very much of its time (hence the reference to the dot.com marshes and the fact that the Temple of Pedagogy should perhaps be renamed the Temple of Student Learning). It does however provide a useful tool for exploring different perspectives and the drivers behind them. Professor Salmon recognises that most of us probably spend our time on Crafters Plain where the work is hard and the distances are long.

Collaboration Diagrams

A similar approach to show how the various actors involved interact with the process can be taken with 'Use Case' or 'Collaboration' diagrams to define single 'uses' of the process and relate each of those to one or more actors. They can be useful in defining the high level scope of the process and defining client requirements. A simple collaboration diagram is shown below. Sequence diagrams and workflow diagrams can explore the sub-processes involved further.



We have included one simple example of how a collaboration diagram highlighted the key issues with a business process in a short **case study** based on Northumbria University's HR System implementation.

Some further references on Collaboration Diagrams are listed below:

UML Tutorial: Collaboration Diagrams - Robert C Martin Nov 1997
http://www.objectmentor.com/resources/articles/umlCollaborationDiagrams.pdf

UML Collaboration Diagrams - Kevin McNeish
http://www.visualuml.com/Whitepapers/UML%20Collaboration%20Diagrams.pdf

Writing Collaboration Diagrams
http://odl-skopje.etf.ukim.edu.mk/uml-help/html/03day8.html

You can move on from these broadbrush techniques to define actors in the process to more detailed, structured process mapping.

Process Mapping

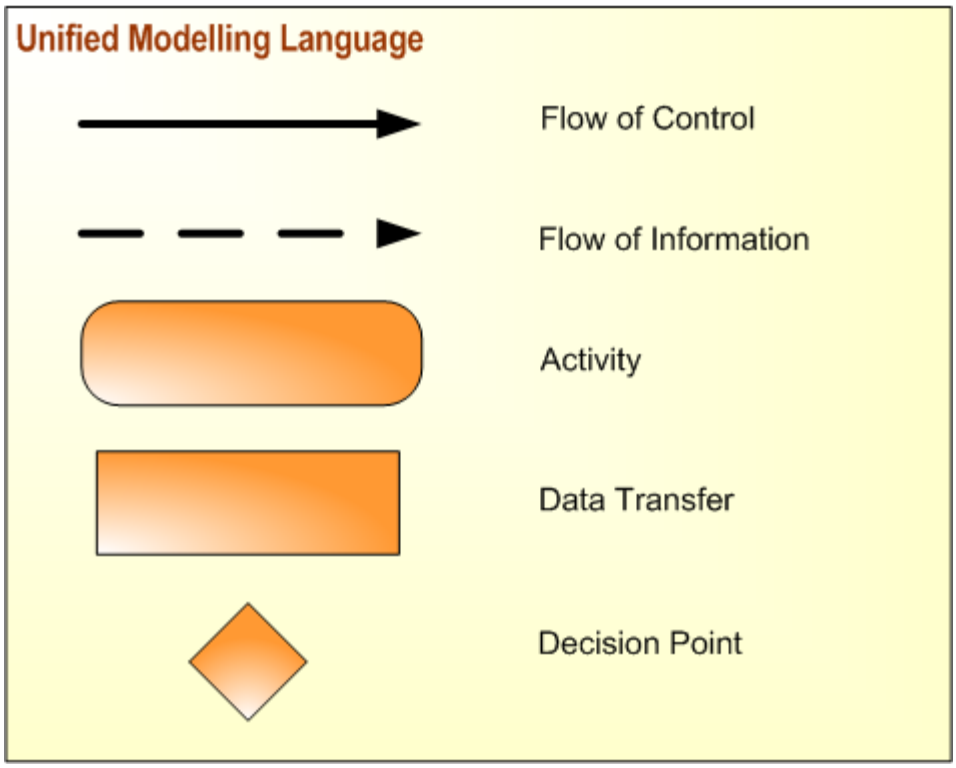
Process maps are used to help analyse and understand a process and to aid its improvement or, ultimately, its replacement. The process map can show what controls a process, what it produces, what areas it covers and which elements make up the process. It shows the sequence of activities, flow of information, decision points and the range of possible process outcomes. They are usually presented in the form of a flow diagram. For this you need to agree a schema to represent the different types of flow and transaction on the process map - we recommend you use **Unified Modelling Language**, or UML.

Unified Modelling Language (UML)

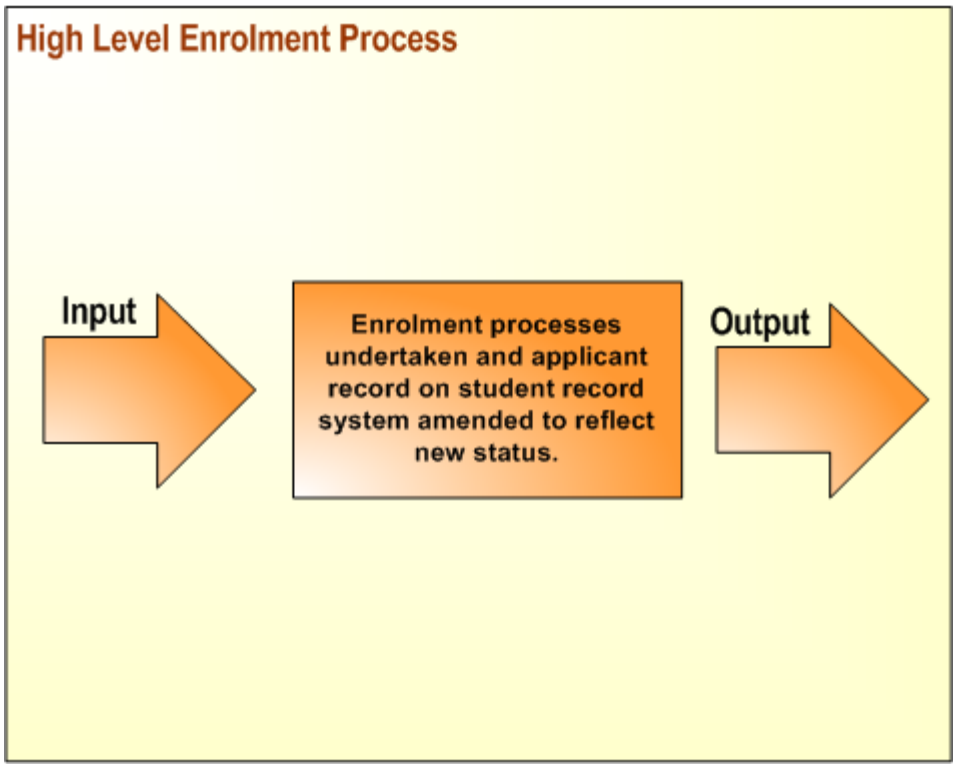
This is the only recognised international standard for drawing process maps. The basic principles of UML are very simple and the chances are that most of you will have encountered UML diagrams and been able to interpret them easily without knowing anything at all about UML or even recognising that the diagrams were using a formal set of conventions.

The basic elements of UML notation are shown below. This is really all you need to know to get started on drawing process maps. You will probably sketch out your process maps on paper or a white board initially but most software

packages with graphics functionality support the use of standard UML symbols. If you are buying a software package especially to support your process mapping you should ensure that it is fully UML compliant. UML is merely a diagramming notation not an analytical method in itself. How you interpret the maps you draw is critical to how well you succeed against your objectives.

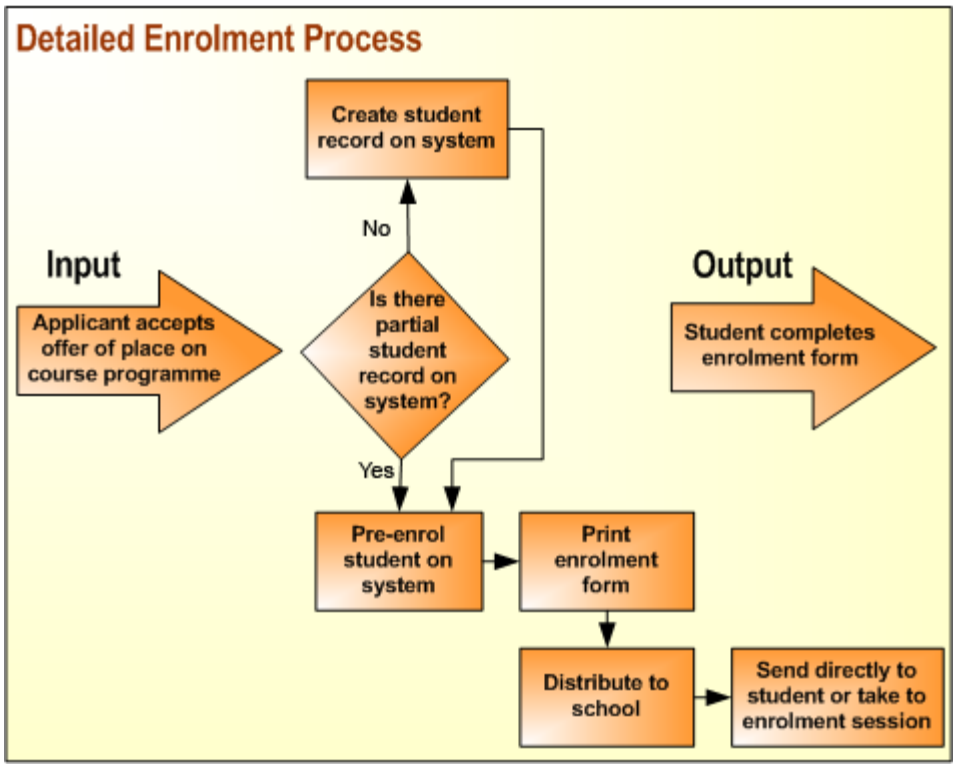


The diagram below shows an example of a generic enrolment process at a very high level - the input is the applicant's acceptance of an offer from an institution. The transformation is the amending of their record to indicate the change in status to expected student and the tasks required in order to facilitate the enrolment of a student and the output is the completion of the Enrolment form by the Student. The elements involved in the transformation part of this process can vary in the degree of detail and complexity.



The actual process can involve a host of pre-enrolment and enrolment actions that need to be undertaken to transform

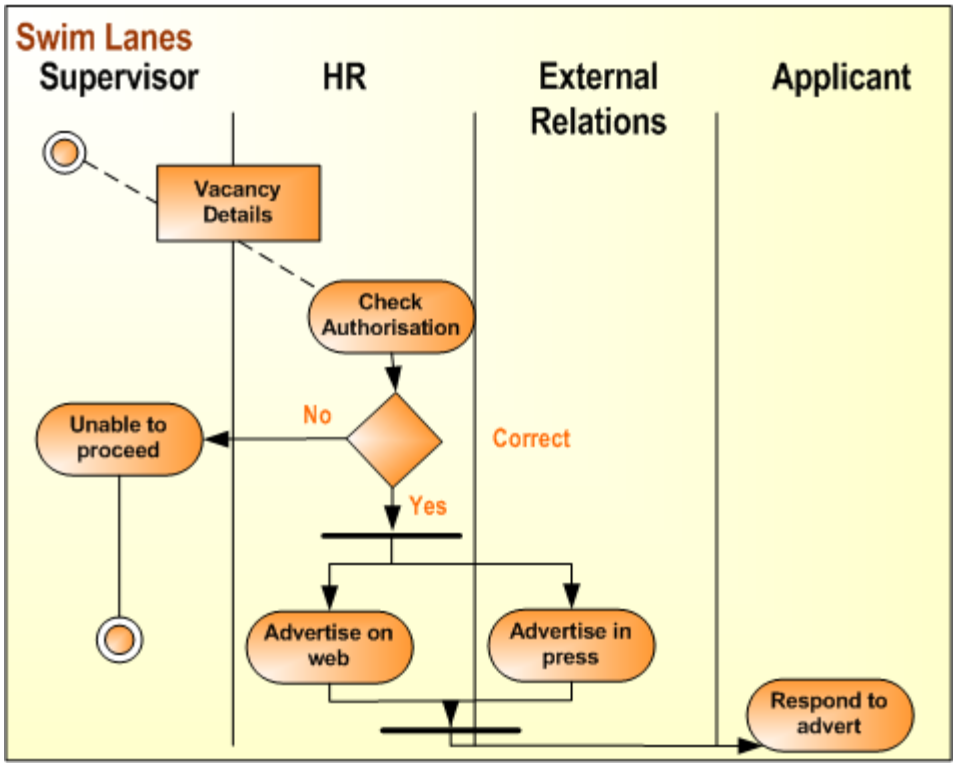
the applicant to the stage where they are in a position to complete an enrolment form. Mapping the next level of detail, including some of the administrative, system and other tasks involved can be done by using a UML diagram (see below).



Benefits of using UML and the context in which it was used were outlined in project reports for the **TUC pre-course support system / Union Education Online (UEO) projects**.

Swim Lanes

A basic flow diagram can be enhanced by the use of 'Swim Lanes' to indicate who has responsibility for carrying out a particular action. The diagram below shows the start of a process map for recruiting staff within an institution. At the simplest level a flow diagram can give you a feel for how complex a process is merely by the number of steps involved. The swim lanes add an extra dimension as they indicate where data is flowing backwards and forwards between departments.



This diagram shows only the first few steps in a process but it is evident even from this that there are a lot of steps and a lot of movement back and forth. Already we can see one department checking another's work and two different departments involved in placing recruitment adverts.

A more rigorous analysis of the earlier tea-making **scenario** could arrive at a process map, using UML and swim lanes, that looks something like **shown in the example**. The horizontal lines mark the start and end of two parallel but independent lines of activity. The temptation is to say right at the start 'Why not ask who wants milk and sugar at the same time as asking who wants tea?' But at this stage you must be non-judgemental. Resist the urge to ask 'Why' or 'Why not just...' because the questions imply criticism and if you are critical then people will just give you the procedure manual and tell you what SHOULD happen instead of what DOES.

Another **example** of a process map using swim lanes deals with the process of creating a new employee record when a member of staff joins the organisation. The example is from an organisation where the HR and payroll systems use different software.

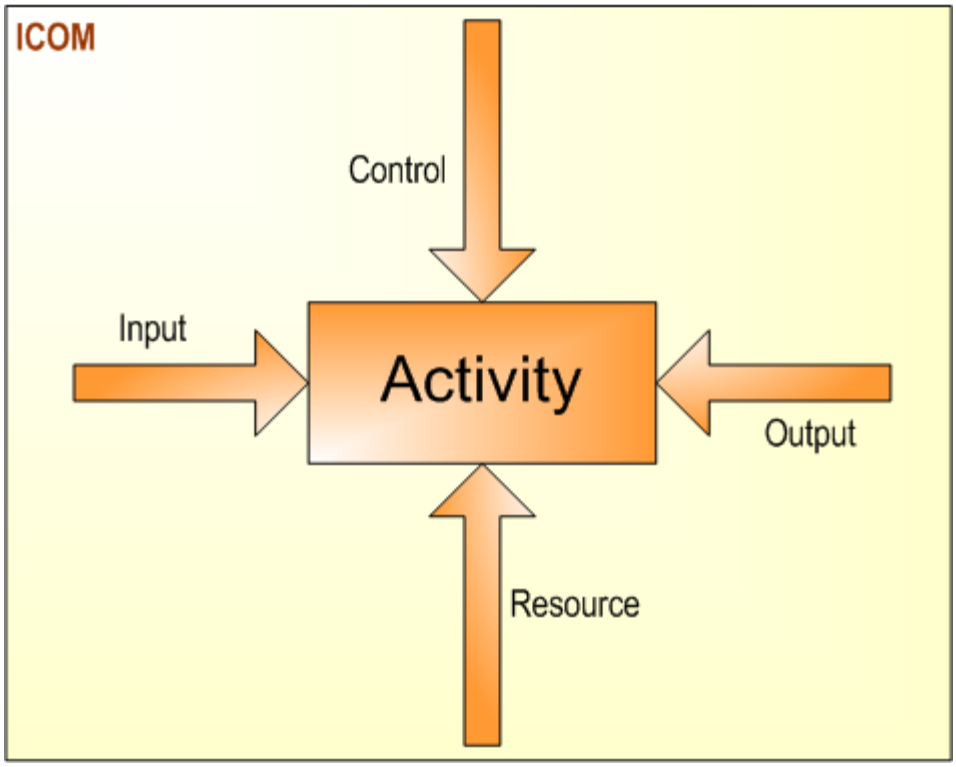
N.B. This example was drawn using Visio graphics software and uses the flow chart symbols standard in that package rather than UML. In this example the obvious conclusion is that the process is heavily reliant on paper, there is excessive data transfer and checking and a lot of duplication. A possible solution, given that the example comes from a large organisation, is to implement an integrated HR/Payroll system. An alternative is to revise the process to involve a greater level of trust between departments and cut out much of the cross-checking.

IDEF0 Analysis

The **IDEF** (Integrated DEFinition) family of methods promote a structure approach to process modelling and analysis. IDEF0 is a process modelling method that was developed from a well established graphical language (the Structured Analysis and Design Technique - SADT) for the US Air Force. It is a top-down, hierarchical method of analysing activities. The analysis consists of an ordered collection of diagrams, text and index, all cross-referenced to one another.

The method is more rigorous and structured than the process mapping previously outlined. This overview is included here because the IDEF0 method is one that is widely used but anyone considering this approach is recommended to undertake further study or training.

Activities are described in terms of their inputs, outputs, controls and mechanisms (ICOM). The technique is sometimes called ICOM although the word mechanisms is frequently replaced by 'resources' which is more meaningful in our context.



Activities are decomposed in a similar way to that described earlier. The rules of IDEF0 however state that there can be no more than six sub-processes on each diagram. A criticism of IDEF0 models is that they are sometimes too concise to be readily understandable to non-experts. Other rules govern the graphical syntax, the fact that all functions require at least one control and the need for a purpose and viewpoint statement for each model.

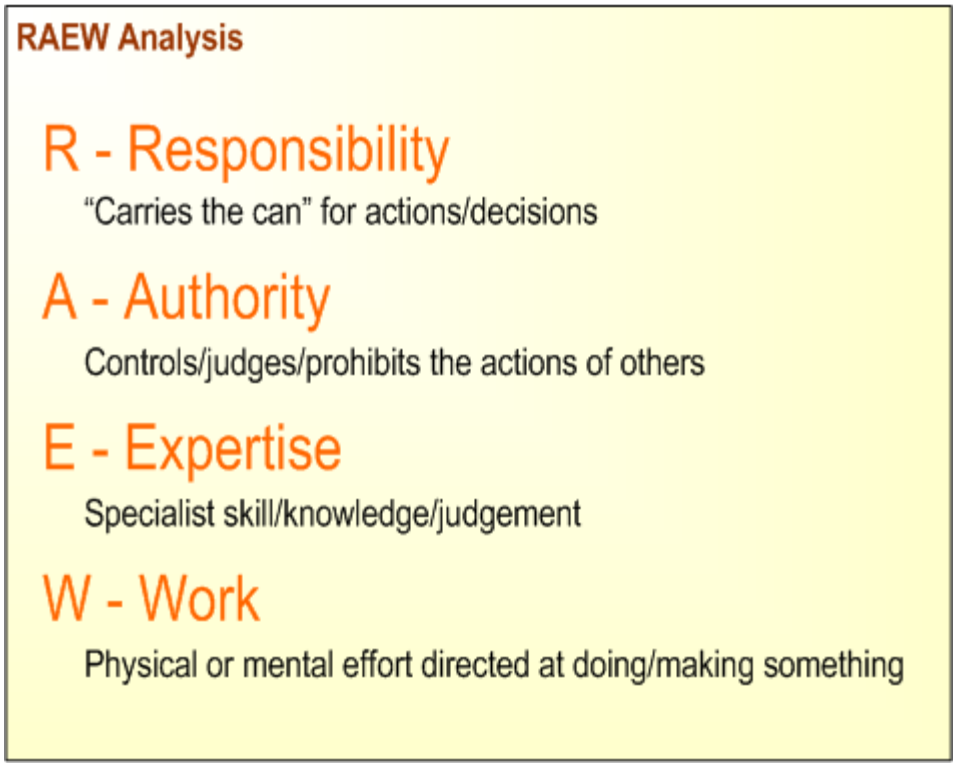
This technique was used by Northumbria University in its Administrative Workflows Analysis Project. Examples of diagrams created to analyse the enrolment process at **Level 1**, **Level 2** and **Level 3** are included in this Kit.

We identified that IDEF0 is a top-down approach. When designing a future process the 'To be' stage you are likely to take a top down approach and continue refining the process to the required level of detail to cover all eventualities. When modelling the 'As is' state however you may often take a bottom-up approach collecting detail of what people do on the ground and grouping related functions. It is possible to build up the IDEF0 model in this way.

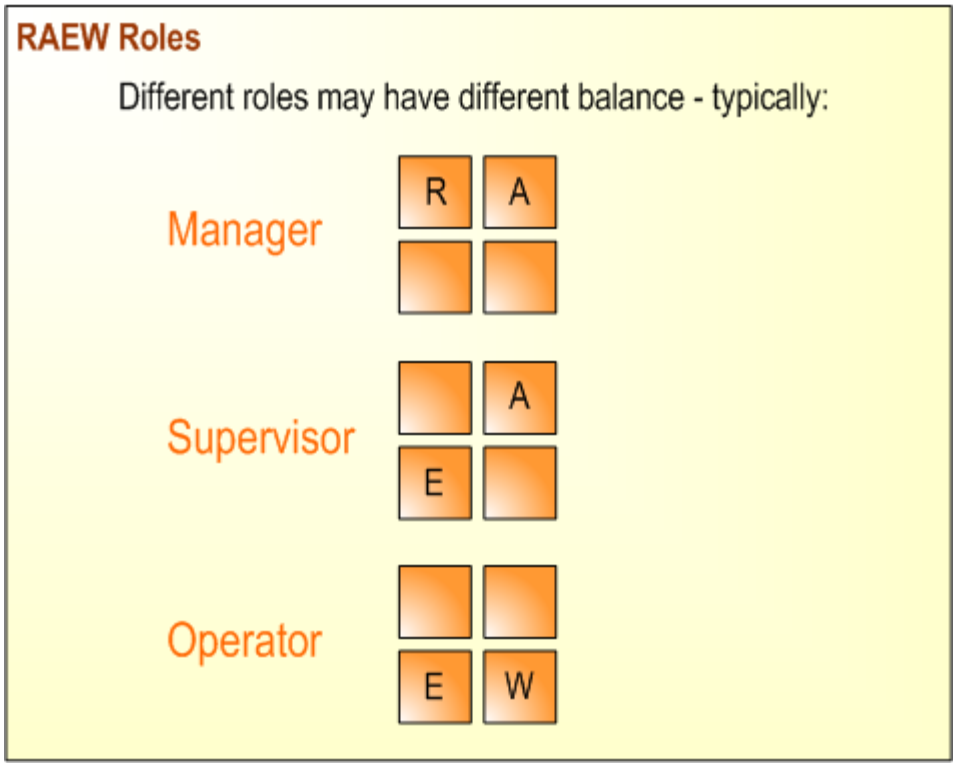
RAEW Analysis

RAEW is a very simple technique, the name stands for Responsibility, Authority, Expertise and Work. This is our recommended analysis technique, it is another that is in widespread use but we have been unable to ascertain where or when it was first developed.

The premise of the method is that these elements form the human/managerial components of the process as follows:



Depending on a person's role in the organisation they will use some combination of these four elements to participate in the process. Different roles have a different balance, some typical distinctions are shown below:



To undertake RAEW analysis you must first have mapped the process in some way. The JISC infoNet recommended approach is to use RAEW in conjunction with a UML Swim Lane diagram. This presents the information in a format that can be readily transferred to a RAEW matrix. The RAEW matrix uses activities as the y axis and 'actors' in the process (departments or individual roles) as the x axis. An example is shown below.

RAEW Example

Recruitment Process Analysis

Description	Supervisor	Manager	HR	External Relations	Applicant	Finance/ Payroll
Job/Person spec drafted/update	RW					
Advertisement drafted	RW					
Request to fill vacancy completed	W					
Request to fill vacancy to budget holder	W					
Budget holder approval		A				
Job/Person spec sent to HR	W					
HR place advert on HR web pages			W			
HR duplicate job/ person/recruitment info			W			
Advertisement sent to external relations			W			
External relations advertise in media				EW		

Having drawn up the matrix - a spreadsheet package provides the most useful format - you then need to decide where the Responsibility, Authority, Expertise and Work for each activity lies. This may not be easy.

Ideally when you review a process:

- Each component should be addressed at least once for each activity
- Each 'actor' involved should play some role in the process

This is unlikely to be the case in reality, particularly with processes that have developed incrementally over time. Each component should be addressed for every activity but you are bound to find areas where you are unable to say who has ultimate responsibility or the definitive expertise. Similarly each actor should play a role but the matrix is likely to raise questions about why particular departments are thought to have a role in certain processes.

RAEW warnings to watch out for:

- Authority with no responsibility
- Responsibility with no authority
- Other roles with no expertise

It is not an exact science. There are often no right and wrong answers and you will be bound to have difficulties and disagreements in coming up with some answers - this in itself is interesting and should tell you something about the process. Similarly if you ask each of the actors to fill in the matrix they will most probably come up with different answers - this is equally valuable information.

The staff recruitment process we looked at as a process map with **Swim Lanes** is provided here as an **RAEW analysis**.

This example raises major issues about how the institution manages its recruitment process. The HR department clearly does a lot of work but it is basic clerical work. All of the Responsibility and Authority and most of the Expertise lies elsewhere. The process is also complex and time-consuming. Considering how it impacts on the student as a client, it is evident that the institution will have difficulties in filling vacancies sufficiently quickly to avoid disrupting essential services, particularly delivery of teaching.

This is a real-life example and the analysis prompted the institution concerned to rethink its whole approach to

recruitment and to devolve the process out to its client departments.

RAEW is a remarkably simple and effective tool for highlighting major process issues. Moriarty and Thompson however raise a note of caution in relation to its use and point out that it can be 'hazardous to the health of the presenter'. This is a tongue in cheek way of pointing out that senior management can often be embarrassed by such a stark and clear representation of malfunction within their organisation.

Process Dysfunction

We have already started to see how a range of analytical tools can help identify dysfunction within our business processes. These issues are sometimes known as 'Process Anti-patterns'. A few of the commonest anti-patterns are listed below.

Anti-pattern Description	Symptoms	Causes
Two Heads are Better than One	Excessive checking.	Lack of trust. Arbitrary fragmentation of process. Unecessary controls.
Yesterday's News	Excessive time taken to complete process.	Too many actors & controls.
Haven't I seen you somewhere before?	Excessive transfer and re-keying of data.	Lack of Information Management. Lack of system integration. Reliance on paper processing.
Belt and Braces	Too much stock or too many staff at certain times.	Lack of Information Management. Lack of system integration. Reliance on paper processing.
Play it Again Sam	Unnecessary reworking.	Too many actors involved. Reluctance to accept best practice. 'Not invented here' syndrome.
One Size Fits All	Unable to cope with range of client needs.	Lack of client focus. Working practices haven't kept up with changing requirements. Trying to 'pave cow paths'.
Whose Line is it Anyway?	Clients passed between departments to complete process.	Lack of client focus. No-one accepting responsibility for client satisfaction.
Superman's Day Off	Knowledge resides in individuals.	Lack of communication. Reliance on old unsupported technology.
Not my Fault	Blame Culture	Lack of leadership. Responsibility and authority separated. Lack of staff development.
Running to Stand Still	All of the above & frequent organisational restructures.	Lack of strategy & leadership. Institution constantly in firefighting mode.

Continuous Process Improvement

As mentioned at the start of the Kit and outlined in our process review model, process analysis and redesign are more

likely to form part of a continually looping review and improvement model in your organisation. Modern organisations never stops looking for improvement, and this could manifest itself in a number of ways, for example striving for:

- Zero defects/inaccuracies/errors
- Time compression
- Cost down - globalisation, funding regimes
- Better targeting of resources to strategic priorities, streamlining etc.

This is certainly true in the education sector.

In striving to calculate our efficiency we should in theory be measuring achievement against all the calculated possibilities for error - for instance if data is entered onto a computer system from a paper form you could look at each field on the form and measure - (a) is the information correct on the form and (b) is it entered accurately onto the computer.

A methodology called Six Sigma takes measurement of efficiency to the extreme. Within the Six Sigma methodology you would also measure the instances of data loss from the screen before the record is committed or saved, loss between the terminal and the server and any subsequent loss because of database malfunction. Each potential has to be investigated and any risk mitigated against. Six sigma is a statistical measurement which strives for just 16 errors in a million - companies who undertake quality exercises such as Total Quality Management or BS standards can expect to operate at three to four sigma, which works out at 1,600 to 12,000 errors in a million possibilities for error.

However, Six Sigma is hideously expensive, requires very highly qualified statisticians and is outside the scope of most businesses except successful multi-nationals, where some have saved millions in the long term through pursuing this level of efficiency. If you'd still like to know more then we have provided an **overview** of the methodology.

Another methodology that is used to improve existing processes is the **Kaizen** philosophy for continuous and incremental self improvement that has been applied to business and management.

Simpler models for process analysis and design are probably more practically applicable in the education sector. The same methods can be applied to looking at incremental process improvement as well as more substantial redesigns and - in some rare cases - wholesale business process re-engineering.

An increasingly popular emerging methodology for IT Service Management (ITSM) is the **IT Infrastructure Library** or ITIL methodology, developed by the UK's Office of Government Commerce (OGC) and supported by publications, qualifications and an international user group. ITIL is intended to assist organisations to develop a framework for IT Service Management using process review as a base.

Process Design

Once you have analysed your processes and decided on the scope of the changes you want to make it is time to design your future process or the 'To be' state. All of the methods we have outlined are simply analytical tools. They can highlight issues with your current processes but only you can work out how to resolve them. This is a great opportunity and even if you shy away from business re-engineering you should think of process design as 'engineering'. Most of the processes in our institutions have evolved in a fairly ad hoc way over time; this is the chance to think them through end-to-end from a business perspective. The gaps between your current process and the vision of where you want to be can provide the roadmap to a revised process.

You should also take the time to look for examples of best practice in other organisations. Successful systems implementations tend to be those that have thought about their processes rather than simply automating existing functions. Tait says 'By definition, a best practice is a superior method or an innovative process that contributes to improved performance. The test of a best practice is not whether it is the ultimate example; rather, the test is whether it works in the situation. We also like to call best practices 'credible alternatives' because a best practice at one college or university might not be a solution for another institution.' [Tait F. 1999. Enterprise Process Engineering: A Template Tailored for Higher Education. Cause/Effect Vol 22 no.1.]

Northumbria University undertook a major review of its processes relating to student administration in advance of a system implementation project. The review team came up with a number of recommendations that are presented in a report entitled 'Ways of Working Smarter not Harder: A fresh look at best practice, good practice and administrative workflows.' An **Executive Summary** of the report is available.

At this stage you are thinking about 'What would we like to do?' but also about 'What is it feasible to do?' The **information and data** section highlights some of the constraints that may be imposed by your data. Similarly if you are designing a process in tandem with a system implementation you need to be fully aware of the capabilities and limitations of the new system. There are notable examples of instances where institutions with ambitious change plans have wasted many months in 'Blue-Sky Thinking' about new processes only to find that the system they purchased would not support many of the things they wanted to do. Matching your requirements to software capabilities is something that needs to occur throughout the **System Selection** phase.

New technology can however offer considerable opportunities to change the way you do business. In particular web portals, VLEs, self-service functionality and automated workflows are features that can facilitate a radical rethink of how we deliver services to clients. System implementation is too major and costly a task to undertake simply in order to automate some aspects of existing processes. A **case study** of how Hertfordshire University implemented student self-service enrolment looks at some of these issues.

Process design is really the reverse of the work you have done in identifying dysfunction and process anti-patterns. Now you are trying to engineer a new process that doesn't exhibit these traits. The same tools that you used for analysis can be employed to map out the future process models and check for issues. The Northumbria Health management **case study** is a good example of the benefits of viewing the same process in a different way and redesigning it with a different emphasis.

Going back to the composition of the project team: the right mix of people will help encourage the sort of creativity needed in a project. As a project manager it is worth trying out some lateral thinking exercises and brainstorming as two techniques for encouraging creative thinking when you meet problems and there are no obvious solutions.

Creativity

'Creativity is the application of imaginative thought which results in new solutions to problems' - Goodman, M (1995) Creative Management. FT Prentice Hall: London

'To look where everyone else is looking and see what no one else can see' - Duggan, R. (1997) Innovation Translators: Private Communication

Culture and education can be inhibiting factors to creativity. As children we learn by touching things, trying things out and making mistakes. Later formal education, training and employment - following set procedures - tend to chip away at our creativity over time.

We tend not to be good at creativity because we don't often practice it - but the more we do it the better we get. Changing ideas brings conflict as well as insight, which people can find threatening. Typically re-patterning is difficult as we tend to add extras rather than shake up and start again.

The right mix of people in a project team can encourage the sort of creativity needed in a project. Group brainstorming sessions are an ideal backdrop for generating creative 'out of the box' solutions - getting all the ideas out but not allowing anyone to stifle creativity by criticising. Once ideas start coming these can really snowball - putting together out of the box ideas to form new creative solutions.

In any project - and particularly when challenging existing processes and looking to develop new ones - creative thinking can be invaluable in facing up to problems and coming up with possible solutions when there were no obvious ones. It can also fuel a sense of excitement and achievement in thinking 'out of the box' and stimulate bigger and better ideas.

A HEFCE **Good Management Practice project** led by the University of East Anglia developed the 'iLab' concept as a tool for use in strategic and project planning, research and teaching in higher education.

The iLab concept is based around three elements:

- Providing a dedicated space that in no way resembles normal working conditions. The features which characterise it are privacy, multiple media for working, including whiteboard walls and technology to capture thoughts and ideas, and a distinctive design of layout with decoration.
- Facilitating co-operative ways of working which encourage the contribution of all. This includes collaborative working tools such as electronic meetings software (for brainstorming, list building, information gathering, voting, organising, prioritising and consensus building etc.) and the use of a variety of facilitation techniques to stimulate and capture this contribution. Such tools have the additional benefit of relieving the groups of the need to stop and write things up as they go - both ideas and plans are captured in the process of working.
- Using facilitation techniques to stimulate open, creative thinking, and to lead the group in focussing and extracting useable outcomes from this thinking. "What might happen, what might we do?" is combined with "How could we bring this action into reality?"

The three elements combine to generate a process in which management development is integrated into real planning and problem solving. Regular exposure to the iLab environment encourages managers to try different starting points and to ask different kinds of questions - essentially the process of 'learning the habit of innovation'. Further information on the project and the facilities available can be found on their **website**.

Creativity - Resources

Finally, to inspire you to be creative about how you view things, here's a list from 'The Order of Things: an Archaeology of the Human Sciences' (1970, Tavistock Publications Ltd) by the French philosopher Michel Foucault. It is a scheme of classifying animals taken from a Chinese encyclopaedia.

A. Belonging to the Emperor

B. Embalmed

C. Tame

D. Sucking Pigs

E. Sirens

F. Fabulous

G. Stray Dogs

H. Included in the present classification

I. Frenzied

J. Innumerable

K. Drawn with a very fine camelhair brush

L. Et cetera

M. Having just broken the water pitcher

N. That from a way off look like flies

Foucault uses this to make an important point. The impossibility of the scheme comes not from any of the individual categories (some of the animals are fictitious but they are separately identified as such) what seems impossible to our way of thinking is simply that somebody put A, B, C down the side and linked them together. Why not try putting the

administrator drawn with a fine camel-hair brush next to one that's just broken the water pitcher and see where it takes us?

A number of additional resources are listed below to get you started thinking creatively!:

The MindTools website gives resources that can be used for creative thinking at:
http://www.mindtools.com/pages/article/newCT_09.htm

Creative thinking exercises can be found at:
http://www.brainstorming.co.uk/tutorials/creativethinkingcontents.html
This website demonstrates software available for purchase.

Lateral thinking - linking two unconnected thoughts together to form a new idea - is a prime facilitator for creativity. There are many examples of these to be found on the internet, some good ones are at:
http://www.mycoted.com/creativity/puzzles/puzzles.php

A whole raft of creative thinking techniques are available at:
http://www.mycoted.com/creativity/techniques/index.php

Implementation

Having redesigned your process you still need to implement the change. Process redesign, on however small a scale, can be a major issue for the actors in the process and you need to be aware that in tandem with your review project you are actually undertaking a change management project.

Changing a process involves many of the same considerations as changing an information system, in particular the need to consider how the change will be introduced. The options are:

- Big bang approach
- Pilot implementation in a selected area
- Phased implementation

The first approach is often effective in the commercial sector but within the education sector more gradual approaches, such as piloting in a single department can be useful in gaining 'champions' of the new way of doing things. This is probably the most common approach taken when implementing a VLE. When selecting a department to pilot you may want to choose an area that:

- Is enthusiastic about the change
- Has a history of problems with the old process
- Is influential in the organisation

Most importantly however you need to ensure that the manager/s of the pilot area are committed to and prepared to drive the change.

Staff development is an important issue, as with any change, and you need to allow time for training and bedding-in of the new processes. Again the success of this relates to management commitment. We have seen well thought-out implementation plans go awry when managers prevent staff attending planned training because a crisis has arisen elsewhere.

The issue of needing to maintain old processes while new ones are introduced is a major one. You can't halt the normal running of the organisation whilst you implement your project so in most cases you need to plan for parallel running for a time. Looking at the information flows in the organisation will help you plan the best time to make the change. The speed of change is a balancing act between ensuring all actors are fully prepared and not dragging the project out so long that it loses momentum.

Embedding change takes time and it is important to undertake evaluation and review following implementation. A good example of the sort of issues that can occur with process change comes from the implementation of an enterprise personnel system in a large institution that had a centralised personnel department and separate payroll function. There was previously dissatisfaction with the lack of a central data source and the need to duplicate records. The new system allowed real time access to all departments. Soon after implementation complaints about the data started to arise. The issue was that although the new process depended on real-time access to data, the vision for the new process had not been properly communicated to staff inputting to the central data source. Those staff were used to a system that was internal to the department and always out of date. If they wanted current data they went to the paper records. Their working practices hadn't changed in line with the new system and they continued to stack up paper documents to be input 'at quiet periods'. By communicating the vision for the system as serving the real-time needs of a new range of clients the institution was able to emphasise the fact that the information system was now the core source of data and had to be up to date at all times.

Review

At the outset of any project that sets out to change processes you need to think about how you will evaluate the project. Once you know the scope of what you are setting out to do, you have to ask yourself 'How will we know when we're successful?' or 'How will we know when we're doing it better?'

It follows that you need to set targets that are measurable in some way such as time taken to get students enrolled. The SMART philosophy applies - objectives should be:

- Specific
- Measurable
- Achievable
- Realistic
- Targeted

It also follows that your future process models need to be thoroughly tested prior to implementation. Try to find examples of exceptions and special circumstances and check that they will not cause the process to fail.

Troubleshooting/Barriers

Process change isn't easy. The reasons why it sometimes encounters difficulties or even fails altogether are many and varied but the issues tend to be common to those faced by many projects in the education environment. Here are a few of the issues you may have to tackle:

Barriers to Change		
Symptoms	**Possible Causes**	**Mitigation**
Taking too long to implement	Lack of strategy & vision Lack of planning Lack of communication Lack of leadership/empowerment Lack of stakeholder involvement/engagement Lack of focus on	Think Strategically, underpinning this with sound Project Management and Change Management frameworks
Proposals not accepted by stakeholders		
Expecting new systems to solve problems without considering process		

Trying to change without making anyone unhappy	clients/value/opportunities, focussing instead on costs Poor understanding of processes in a holistic sense, and/or information needs and flows Trying to undertake too many change projects at once Lack of staff development	
Losing sight of vision as soon as somebody resists the change		

As you review the outcome of your process change think about the above factors and what lessons may be learned for your next round of process improvement.

Costing

The emphasis of this infoKit is on designing business processes in line with the **six administrative principles** outlined previously and on seeking opportunities for income generation. The infoKit is intended for an audience of functional specialists rather than management accountants hence we do not cover the costing of business processes in any technical detail. It is however worth taking the time to outline the sort of financial model that would support a process-driven approach.

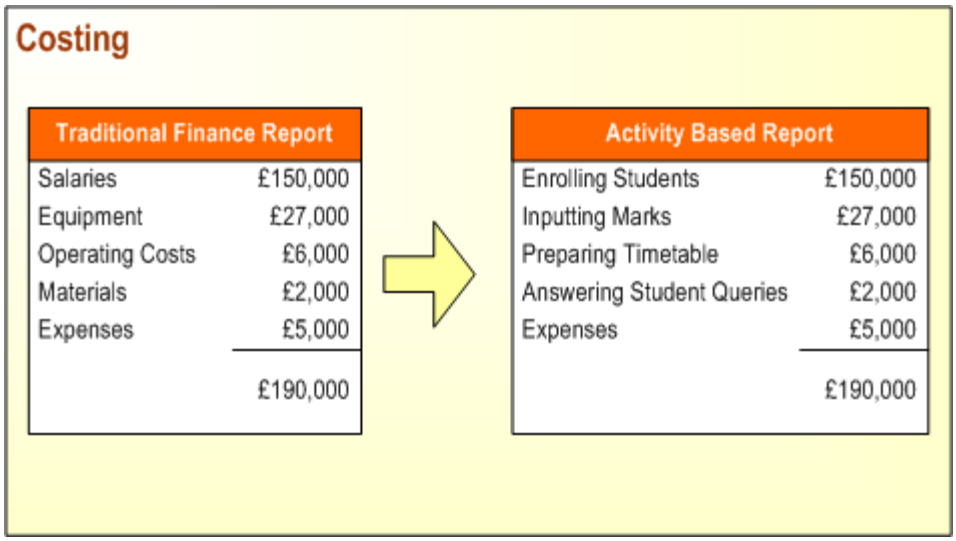
The concept of Activity Based Costing (ABC) developed during the late 1980s, largely out of work undertaken by Harvard Business School, is one that fits well with a process approach.

'When you cut to the chase, costs are simply the residual of people or equipment doing activities. Costs are a derivative. They are a dependent variable - the residual of work being done and things being purchased. They reflect an impact. Costs are the shadow of a body or the echo of a sound.' [Cokins G. 1996 - Activity Based Cost Management: Making it Work]. This view is one which recognises that costs are symptoms not causes. Going back to the concept of **process dysfunction** outlined above, all of the problems identified result in the symptom of increased costs.

We have already seen that it is processes not departments that deliver client satisfaction and that a process approach necessitates looking across organisational boundaries. With this in mind it is easy to see how traditional financial accounting models are frequently incapable of supporting a process-driven approach. Financial reporting by Department or cost centre perpetuates the vertical hierarchy, the stovepipes or silos, that inhibit an organisation's performance.

Cokins (ibid) says 'Traditional accounting blocks managers from seeing, understanding, and reacting to the costs they should be managing. It blocks them from understanding the causes of their costs. In contrast, activity accounting brings visibility. It also brings quantification. ABC connects action words to management concepts and vice versa. It shows end-users where accountability and empowerment intersect. It is a mirror reflection of the organization's costs of business processes.' He also goes on to say 'Activity accounting provides a natural framework to assign value. Where are we adding value? Where are we not adding value? Where should we be adding value? How well are we adding value?' The judgement of this value must of course be related to your strategic objectives.

The difference can be seen most clearly by considering some example financial reports (below). The first is a traditional financial report and the second an activity based report. The activity based report uses the same descriptive terms recommended for process analysis: verb + noun.



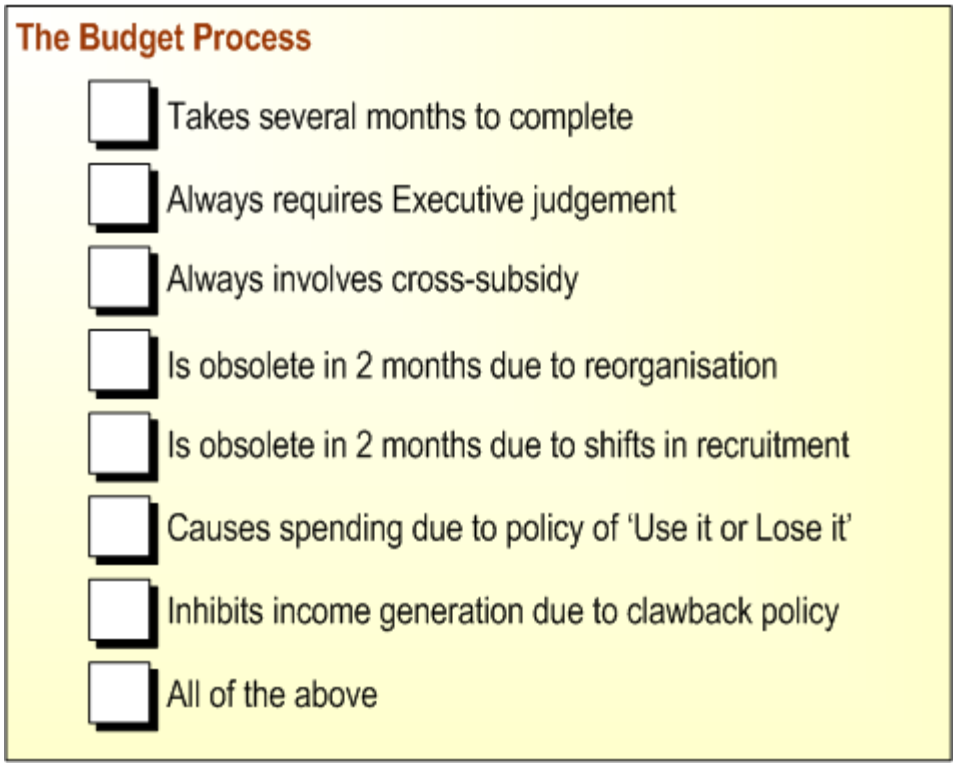
In education sector organisations, where staff costs make up roughly 70% of expenditure in any institution, it is easy to see the value of the second approach particularly when taking cost/benefit decisions on implementing new systems or processes. Faced with the first report many managers feel powerless when asked to cut costs and generate efficiencies. However by starting to look at activities people are faced with something they can easily understand and something they are empowered to affect.

Defining and implementing an ABC model is a matter for finance specialists and thus outside the scope of this infoKit. **Further references** are available for those wishing to find out more about ABC approaches.

Before leaving the subject of costing, a brief word about budgets. The issue of budget setting is again far outside the scope of JISC infoNet's remit but, since it is our role to provoke discussion about strategic approaches, it is worth a brief digression to consider how the traditional budget process impacts on strategic approaches to process and system improvement.

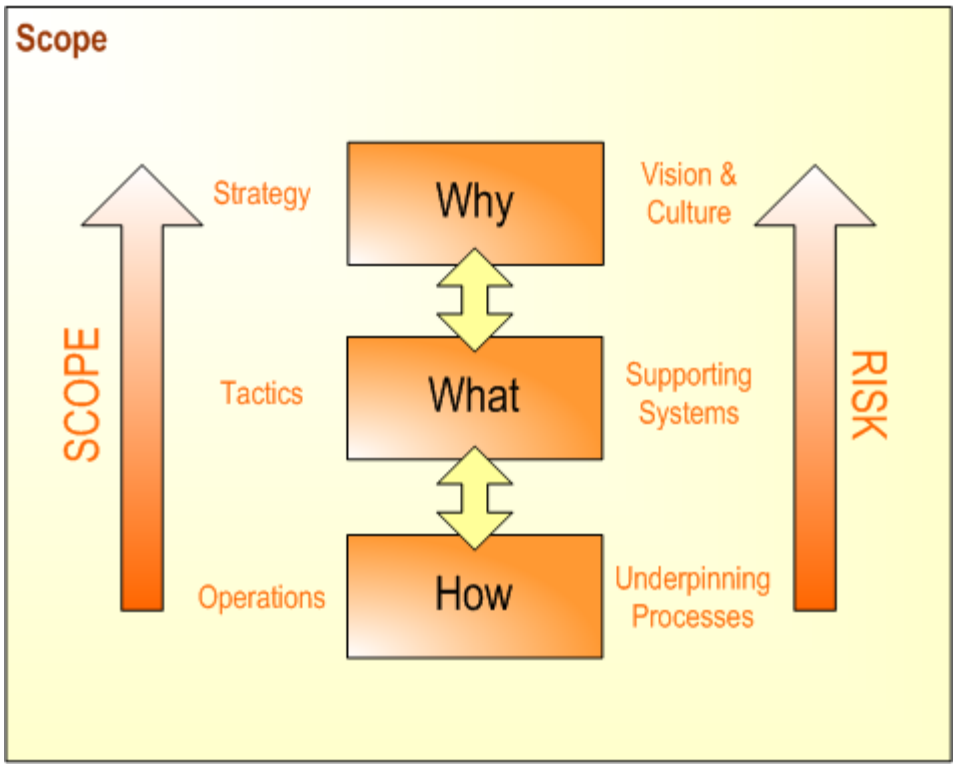
Budgets are the standard means of controlling expenditure. Income is divided up amongst departments who then subdivide it amongst their component parts. In other words the budget mirrors the organisation structure not the business process. Cokins (ibid) demonstrates that an ABC approach demands a new approach to budgeting 'Low cost is a dependent variable; it's the result of doing other things well. You cannot budget your way into low-cost operations. Budget management and cost management are not synonymous - Budget should reflect strategy.'

Bearing in mind the effects of process dysfunction and their associated symptom, increased costs, it is worth considering whether your institution's budget process exhibits any of the following features.



Business Process Re-engineering

Finally we come to the topic of Business Process Re-engineering. The JISC infoNet view on this is that few institutions are ready or able to undertake major re-engineering. Re-engineering is about questioning the fundamental nature of what you do and the services you deliver. The diagram below shows how as the scope of what you are tackling expands so does the risk involved.



Some institutions have undertaken business change projects with a very wide-ranging scope. Rice University in the USA is one example and they have authored a **case study** of their experience.

The resources included in this Kit can help you embark on a cycle of continuous process improvement - mix and match

the tools and techniques to get the right balance for you. As well as the hyperlinks within the Kit, a number of further references are listed below.

Good Luck!

Further References

Hammer M. 1996 'Beyond Reengineering: How the Process-Centred Organization is changing our work and our lives.' New York. Harper Business.

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